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a group of fishes of whose development almost nothing is known, and a detailed account of its embryology would have an interest and importance only excelled among the vertebrates by that of *Ceratodus*. The gar pike's development has only been studied by Mr. Agassiz, and his observations are very incomplete, though very important. A study of the development of any of the *Aminuridae* (cat fish and horned pouts) would be very interesting and instructive, and would amply repay the person who will undertake it, while the man who investigates the method of growth of *Myxine*, so common at Eastport, will have an entirely unexplored field to himself.

The problems which we have stated are almost entirely embryological, and it is in this line of development that the most important results are to be reached. A future article will present more of the anatomical side.

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RECENT LITERATURE.

THE ZOOLOGICAL RECORD FOR 1880.¹—This volume, the seventeenth of the series, has appeared with commendable promptness, and Mr. Rye, the editor, assures us that this rate of issue will henceforth be maintained. The recorders of the different departments are nearly the same as in the preceding volume.

It appears that the number of new genera and sub-genera contained in the present volume is 1008, as against 976 of Vol. xvi (which contained sixty new genera of *Arachnida*, properly belonging to Vol. xv, from which that group had been omitted). These are divided as follows: Mammalia, 34; Aves, 16; Reptilia, 216; Pisces, 31; Mollusca and Molluscoida, 79; Crustacea, 80; Arachnida, 78; Myriopoda, 2; Insecta, 438; Vermes, 28; Echinodermata, 24; Coelenterata, 70; Spongida, 51; and Protozoa, 56.

The number of pages is about the same as in the preceding volume. On p. 3, Myriopoda, we notice an important error. Mr. Ryder's order *Symphyla* is spelled *Symphuta*, the name not being repeated in the note under the heading thus misspelled.

This record is of the greatest service to the systematic zoölogist, and to none more than those who are unfortunate enough not to be within reach of large libraries. Hence the American zoölogist needs the "Record," if he has no other works.

THE FISH FAUNA OF BORNEO.²—In Vol. xvi of the Annals of the Genoa Museum of Natural History, D. Vinciguerra com-

¹ *The Record of Zoological Literature*. London. Van Voorst. 1881. 8vo.

² *Annali del Museo Civico di Storia Naturale di Genova*. Vol. xvi. D. VINCIGUERRA. Appunti ittiologici sulle collezioni de Museo Civico di Genova iv. Prima contribuzione alla Fauna Ittiologica di Borneo, pp. 161-182.

mences the publication of the results of the examination of a rich collection of fishes made by the Marquis Giacomo Doria and Dr. Odoardo Beccari during their residence at Sarawak.

Eighteen species of Siluroids, two of them new to science, and two others not before known to occur in Borneo are described; raising, with six species enumerated by E. Von Martens in the Zoölogy of the Prussian Expedition to Eastern Asia, the total number of known Bornean siluroids to fifty-eight.

The writer remarks that he finds many new species in this collection, and that this may be expected from the fact that, except Bleeker, few naturalists have collected the fishes of the island.

H. Schlegel, S. Müller, and J. Richardson had noted only ten Bornean species before the time of Bleeker, who, examining the collections made by Dutch government officials, raised the number to three hundred and forty, all of which were from few localities.

Since that date the only additions to our ichthyological knowledge of Borneo have been the description by Dr. A. Günther of two species of Gobiidæ, which formed part of the Doria collection, and the chapter by Martens on ninety-four species of fresh-water fishes from the rivers Kapuas and Sambas.

MARK'S MATURATION, FECUNDATION AND SEGMENTATION OF LIMAX.¹—This work is very timely, and is valuable, both from the original facts it contains regarding the intricate subject of the preparation of the egg of the slug for fertilization, as well as the latter process, and the mode of segmentation, which is of great value from the detailed exposition for the English-reading student of a department of embryology which has been mapped out mainly by German embryologists.

The author first gives us his own original observations, illustrated by five excellent double plates, and then presents us with a lengthy discussion and review of all the papers and works which have been published on the earliest phases of embryonic development above enumerated.

In the third part, Dr. Mark presents theoretical considerations and general conclusions regarding the promorphology of the ovum, polar phenomena, asters, spiral asters, the nuclear spindle, origin of nuclei, the germinative vesicle and polar globules. The appearance of such a profound, critical summary of what is known on these points, should give a stimulus to those studies in this country. The treatment of the subject by the author is clear, candid, and the matter well digested and elaborated.

GENTRY'S NESTS AND EGGS.²—It is hard to say whether we look upon these beautiful colored lithographs, representing the nests

¹ *Bulletin of the Museum of Comparative Zoölogy at Harvard College*, Vol. vi, No. 12. Maturation, Fecundation and Segmentation of *Limax campestris* Binney. By E. L. MARK, Cambridge, Oct., 1881. 8vo, pp. 173-625. 5 plates.

² *Illustrations of the Nests and Eggs of Birds of the United States*. J. A. Wagnerseller, 23 N. Sixth street, Philadelphia.